



SEQUENCE LISTING

<110> Xiao, Zhi-Cheng

<120> Materials and Methods Relating to the Treatment of Injury and Disease to the Central Nervous System

<130> 0380-P03638US00

<140> 10/537,757

<141> 2005-06-06

<150> PCT/GB03/005329

<151> 2003-12-05

<150> US 60/431,549

<151> 2002-12-06

<150> US 60/480,138

<151> 2003-06-20

<160> 33

<170> PatentIn version 3.1

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<212> PRT

<213> Homo sapiens

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Asp Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp
35 40 45
Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser
50 55 60
Ala Ala Pro Val Pro Thr Ala Pro Ala Ala Gly Ala Pro Leu Met Asp
65 70 75 80
Phe Gly Asn Asp Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
85 90 95
Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro
100 105 110
Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val
115 120 125
Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro
130 135 140
Pro Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr

145					150					155				160
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			180					185					190	Leu
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		195					200					205		Asp
Leu	Lys	Glu	Gln	Pro	Gly	Asn	Thr	Ile	Ser	Ala	Gly	Gln	Glu	Asp
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Pro	Ser	Val	Leu	Leu	Glu	Thr	Ala	Ala	Ser	Leu	Pro	Ser	Leu	Ser
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Leu	Ser	Ala	Ala	Ser	Phe	Lys	Glu	His	Glu	Tyr	Leu	Gly	Asn	Leu
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Thr	Val	Leu	Pro	Thr	Glu	Gly	Thr	Leu	Gln	Glu	Asn	Val	Ser	Glu
			260					265					270	Ala
Ser	Lys	Glu	Val	Ser	Glu	Lys	Ala	Lys	Thr	Leu	Leu	Ile	Asp	Arg
		275					280					285		Asp
Leu	Thr	Glu	Phe	Ser	Glu	Leu	Glu	Tyr	Ser	Glu	Met	Gly	Ser	Ser
	290					295					300			Phe
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305					310					315				Arg
Glu	Glu	Ile	Ile	Val	Lys	Asn	Lys	Asp	Glu	Glu	Glu	Lys	Leu	Val
				325					330				335	Ser
Asn	Asn	Ile	Leu	His	Asn	Gln	Gln	Glu	Leu	Pro	Thr	Ala	Leu	Thr
			340					345					350	Lys
Leu	Val	Lys	Glu	Asp	Glu	Val	Val	Ser	Ser	Glu	Lys	Ala	Lys	Asp
		355					360					365		Ser
Phe	Asn	Glu	Lys	Arg	Val	Ala	Val	Glu	Ala	Pro	Met	Arg	Glu	Glu
	370					375					380			Tyr
Ala	Asp	Phe	Lys	Pro	Phe	Glu	Arg	Val	Trp	Glu	Val	Lys	Asp	Ser
385					390					395				Lys
Glu	Asp	Ser	Asp	Met	Leu	Ala	Ala	Gly	Gly	Lys	Ile	Glu	Ser	Asn
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Glu	Ser	Lys	Val	Asp	Lys	Lys	Cys	Phe	Ala	Asp	Ser	Leu	Glu	Gln
			420					425					430	Thr
Asn	His	Glu	Lys	Asp	Ser	Glu	Ser	Ser	Asn	Asp	Asp	Thr	Ser	Phe
		435					440					445		Pro
Ser	Thr	Pro	Glu	Gly	Ile	Lys	Asp	Arg	Pro	Gly	Ala	Tyr	Ile	Thr
	450					455					460			Cys
Ala	Pro	Phe	Asn	Pro	Ala	Ala	Thr	Glu	Ser	Ile	Ala	Thr	Asn	Ile
465					470					475				480
Pro	Leu	Leu	Gly	Asp	Pro	Thr	Ser	Glu	Asn	Lys	Thr	Asp	Glu	Lys
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Ile	Glu	Glu	Lys	Lys	Ala	Gln	Ile	Val	Thr	Glu	Lys	Asn	Thr	Ser
			500					505					510	Thr
Lys	Thr	Ser	Asn	Pro	Phe	Leu	Val	Ala	Ala	Gln	Asp	Ser	Glu	Thr
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Tyr Val Thr Thr Asp Asn Leu Thr Lys Val Thr Glu Glu Val Val Ala
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 Asn Met Pro Glu Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys Glu
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 Ser Glu Leu Asn Glu Val Thr Gly Thr Lys Ile Ala Tyr Glu Thr Lys
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 Met Asp Leu Val Gln Thr Ser Glu Val Met Gln Glu Ser Leu Tyr Pro
 580 585 590
 Ala Ala Gln Leu Cys Pro Ser Phe Glu Glu Ser Glu Ala Thr Pro Ser
 595 600 605
 Pro Val Leu Pro Asp Ile Val Met Glu Ala Pro Leu Asn Ser Ala Val
 610 615 620
 Pro Ser Ala Gly Ala Ser Val Ile Gln Pro Ser Ser Ser Pro Leu Glu
 625 630 635 640
 Ala Ser Ser Val Asn Tyr Glu Ser Ile Lys His Glu Pro Glu Asn Pro
 645 650 655
 Pro Pro Tyr Glu Glu Ala Met Ser Val Ser Leu Lys Lys Val Ser Gly
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 Ile Lys Glu Glu Ile Lys Glu Pro Glu Asn Ile Asn Ala Ala Leu Gln
 675 680 685
 Glu Thr Glu Ala Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys Glu
 690 695 700
 Thr Lys Leu Ser Ala Glu Pro Ala Pro Asp Phe Ser Asp Tyr Ser Glu
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 Met Ala Lys Val Glu Gln Pro Val Pro Asp His Ser Glu Leu Val Glu
 725 730 735
 Asp Ser Ser Pro Asp Ser Glu Pro Val Asp Leu Phe Ser Asp Asp Ser
 740 745 750
 Ile Pro Asp Val Pro Gln Lys Gln Asp Glu Thr Val Met Leu Val Lys
 755 760 765
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 770 775 780
 Lys Glu Lys Leu Ser Ala Leu Pro Pro Glu Gly Gly Lys Pro Tyr Leu
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 Glu Ser Phe Lys Leu Ser Leu Asp Asn Thr Lys Asp Thr Leu Leu Pro
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 Asp Glu Val Ser Thr Leu Ser Lys Lys Glu Lys Ile Pro Leu Gln Met
 820 825 830
 Glu Glu Leu Ser Thr Ala Val Tyr Ser Asn Asp Asp Leu Phe Ile Ser
 835 840 845
 Lys Glu Ala Gln Ile Arg Glu Thr Glu Thr Phe Ser Asp Ser Ser Pro
 850 855 860
 Ile Glu Ile Ile Asp Glu Phe Pro Thr Leu Ile Ser Ser Lys Thr Asp
 865 870 875 880
 Ser Phe Ser Lys Leu Ala Arg Glu Tyr Thr Asp Leu Glu Val Ser His
 885 890 895
 Lys Ser Glu Ile Ala Asn Ala Pro Asp Gly Ala Gly Ser Leu Pro Cys
 900 905 910

Thr Glu Leu Pro His Asp Leu Ser Leu Lys Asn Ile Gln Pro Lys Val
 915 920 925
 Glu Glu Lys Ile Ser Phe Ser Asp Asp Phe Ser Lys Asn Gly Ser Ala
 930 935 940
 Thr Ser Lys Val Leu Leu Leu Pro Pro Asp Val Ser Ala Leu Ala Thr
 945 950 955 960
 Gln Ala Glu Ile Glu Ser Ile Val Lys Pro Lys Val Leu Val Lys Glu
 965 970 975
 Ala Glu Lys Lys Leu Pro Ser Asp Thr Glu Lys Glu Asp Arg Ser Pro
 980 985 990
 Ser Ala Ile Phe Ser Ala Glu Leu Ser Lys Thr Ser Val Val Asp Leu
 995 1000 1005
 Leu Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala
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 Ser Leu Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser
 1025 1030 1035
 Val Thr Ala Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser
 1040 1045 1050
 Phe Arg Ile Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp
 1055 1060 1065
 Glu Gly His Pro Phe Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile
 1070 1075 1080
 Ser Glu Glu Leu Val Gln Lys Tyr Ser Asn Ser Ala Leu Gly His
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 Val Asn Cys Thr Ile Lys Glu Leu Arg Arg Leu Phe Leu Val Asp
 1100 1105 1110
 Asp Leu Val Asp Ser Leu Lys Phe Ala Val Leu Met Trp Val Phe
 1115 1120 1125
 Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr Leu Leu Ile Leu
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 1145 1150 1155
 Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys Asn Val
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 Arg Lys Ala Glu
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 20 25 30

Asp Glu Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp
 35 40 45
 Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser
 50 55 60
 Ala Ala Pro Val Pro Thr Ala Pro Ala Ala Gly Ala Pro Leu Met Asp
 65 70 75 80
 Phe Gly Asn Asp Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
 85 90 95
 Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro
 100 105 110
 Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val
 115 120 125
 Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro
 130 135 140
 Pro Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr
 145 150 155 160
 Pro Pro Ala Pro Ala Pro Ala Ala Pro Pro Ser Thr Pro Ala Ala Pro
 165 170 175
 Lys Arg Arg Gly Ser Ser Gly Ser Val Val Val Asp Leu Leu Tyr Trp
 180 185 190
 Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser Leu Phe Leu
 195 200 205
 Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala Tyr Ile
 210 215 220
 Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr Lys Gly
 225 230 235 240
 Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe Arg Ala
 245 250 255
 Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val Gln Lys Tyr
 260 265 270
 Ser Asn Ser Ala Leu Gly His Val Asn Cys Thr Ile Lys Glu Leu Arg
 275 280 285
 Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe Ala Val
 290 295 300
 Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr
 305 310 315 320
 Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Val Pro Val Ile Tyr
 325 330 335
 Glu Arg His Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys
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 Lys Arg Lys Ala Glu
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 <213> Homo sapiens

<400> 3

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Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala
35      40      45
Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr
50      55      60
Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe
65      70      75      80
Arg Ala Tyr Leu Glu Ser Glu Val Ala Ile Ser Glu Glu Leu Val Gln
85      90      95
Lys Tyr Ser Asn Ser Ala Leu Gly His Val Asn Cys Thr Ile Lys Glu
100     105     110
Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe
115     120     125
Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly
130     135     140
Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Val Pro Val
145     150     155     160
Ile Tyr Glu Arg His Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala
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Asn Lys Asn Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro
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Gly Leu Lys Arg Lys Ala Glu
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<211> 1384

<212> PRT

<213> Homo sapiens

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Leu Tyr Ala Arg Ser Leu Gly Ala Ser Ser Tyr Tyr Ser Leu Leu Thr
35      40      45
Ala Pro Arg Phe Ala Arg Leu His Gly Ile Ser Gly Trp Ser Pro Arg
50      55      60
Ile Gly Asp Pro Asn Pro Trp Leu Gln Ile Asp Leu Met Lys Lys His
65      70      75      80
Arg Ile Arg Ala Val Ala Thr Gln Gly Ser Phe Asn Ser Trp Asp Trp
85      90      95
Val Thr Arg Tyr Met Leu Leu Tyr Gly Asp Arg Val Asp Ser Trp Thr
100     105     110
Pro Phe Tyr Gln Arg Gly His Asn Ser Thr Phe Phe Gly Asn Val Asn
115     120     125

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Glu Ser Ala Val Val Arg His Asp Leu His Phe His Phe Thr Ala Arg
 130 135 140
 Tyr Ile Arg Ile Val Pro Leu Ala Trp Asn Pro Arg Gly Lys Ile Gly
 145 150 155 160
 Leu Arg Leu Gly Leu Tyr Gly Cys Pro Tyr Lys Ala Asp Ile Leu Tyr
 165 170 175
 Phe Asp Gly Asp Asp Ala Ile Ser Tyr Arg Phe Pro Arg Gly Val Ser
 180 185 190
 Arg Ser Leu Trp Asp Val Phe Ala Phe Ser Phe Lys Thr Glu Glu Lys
 195 200 205
 Asp Gly Leu Leu Leu His Ala Glu Gly Ala Gln Gly Asp Tyr Val Thr
 210 215 220
 Leu Glu Leu Glu Gly Ala His Leu Leu Leu His Met Ser Leu Gly Ser
 225 230 235 240
 Ser Pro Ile Gln Pro Arg Pro Gly His Thr Thr Val Ser Ala Gly Gly
 245 250 255
 Val Leu Asn Asp Gln His Trp His Tyr Val Arg Val Asp Arg Phe Gly
 260 265 270
 Arg Asp Val Asn Phe Thr Leu Asp Gly Tyr Val Gln Arg Phe Ile Leu
 275 280 285
 Asn Gly Asp Phe Glu Arg Leu Asn Leu Asp Thr Glu Met Phe Ile Gly
 290 295 300
 Gly Leu Val Gly Ala Ala Arg Lys Asn Leu Ala Tyr Arg His Asn Phe
 305 310 315 320
 Arg Gly Cys Ile Glu Asn Val Ile Phe Asn Arg Val Asn Ile Ala Asp
 325 330 335
 Leu Ala Val Arg Arg His Ser Arg Ile Thr Phe Glu Gly Lys Val Ala
 340 345 350
 Phe Arg Cys Leu Asp Pro Val Pro His Pro Ile Asn Phe Gly Gly Pro
 355 360 365
 His Asn Phe Val Gln Val Pro Gly Phe Pro Arg Arg Gly Arg Leu Ala
 370 375 380
 Val Ser Phe Arg Phe Arg Thr Trp Asp Leu Thr Gly Leu Leu Leu Phe
 385 390 395 400
 Ser Arg Leu Gly Asp Gly Leu Gly His Val Glu Leu Thr Leu Ser Glu
 405 410 415
 Gly Gln Val Asn Val Ser Ile Ala Gln Ser Gly Arg Lys Lys Leu Gln
 420 425 430
 Phe Ala Ala Gly Tyr Arg Leu Asn Asp Gly Phe Trp His Glu Val Asn
 435 440 445
 Phe Val Ala Gln Glu Asn His Ala Val Ile Ser Ile Asp Asp Val Glu
 450 455 460
 Gly Ala Glu Val Arg Val Ser Tyr Pro Leu Leu Ile Arg Thr Gly Thr
 465 470 475 480
 Ser Tyr Phe Phe Gly Gly Cys Pro Lys Pro Ala Ser Arg Trp Asp Cys
 485 490 495
 His Ser Asn Gln Thr Ala Phe His Gly Cys Met Glu Leu Leu Lys Val

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Phe	Tyr	Ala	Glu	Val	Leu	Phe	Asp	Thr	Cys	Gly	Ile	Thr	Asp	Arg	Cys
		530					535					540			
Ser	Pro	Asn	Met	Cys	Glu	His	Asp	Gly	Arg	Cys	Tyr	Gln	Ser	Trp	Asp
							550								560
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His	Thr	Pro	Leu	Tyr	Lys	Glu	Ser	Cys	Glu	Ala	Tyr	Arg	Leu	Ser	Gly
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Lys	Thr	Ser	Gly	Asn	Phe	Thr	Ile	Asp	Pro	Asp	Gly	Ser	Gly	Pro	Leu
			595						600						605
Lys	Pro	Phe	Val	Val	Tyr	Cys	Asp	Ile	Arg	Glu	Asn	Arg	Ala	Trp	Thr
							615								620
Val	Val	Arg	His	Asp	Arg	Leu	Trp	Thr	Thr	Arg	Val	Thr	Gly	Ser	Ser
							630								640
Met	Glu	Arg	Pro	Phe	Leu	Gly	Ala	Ile	Gln	Tyr	Trp	Asn	Ala	Ser	Trp
				645					650						655
Glu	Glu	Val	Ser	Ala	Leu	Ala	Asn	Ala	Ser	Gln	His	Cys	Glu	Gln	Trp
			660						665						670
Ile	Glu	Phe	Ser	Cys	Tyr	Asn	Ser	Arg	Leu	Leu	Asn	Thr	Ala	Gly	Gly
			675						680						685
Tyr	Pro	Tyr	Ser	Phe	Trp	Ile	Gly	Arg	Asn	Glu	Glu	Gln	His	Phe	Tyr
			690						695						700
Trp	Gly	Gly	Ser	Gln	Pro	Gly	Ile	Gln	Arg	Cys	Ala	Cys	Gly	Leu	Asp
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Arg	Ser	Cys	Val	Asp	Pro	Ala	Leu	Tyr	Cys	Asn	Cys	Asp	Ala	Asp	Gln
				725					730						735
Pro	Gln	Trp	Arg	Thr	Asp	Lys	Gly	Leu	Leu	Thr	Phe	Val	Asp	His	Leu
				740					745						750
Pro	Val	Thr	Gln	Val	Val	Ile	Gly	Asp	Thr	Asn	Arg	Ser	Thr	Ser	Glu
				755					760						765
Ala	Gln	Phe	Phe	Leu	Arg	Pro	Leu	Arg	Cys	Tyr	Gly	Asp	Arg	Asn	Ser
									775						780
Trp	Asn	Thr	Ile	Ser	Phe	His	Thr	Gly	Ala	Ala	Leu	Arg	Phe	Pro	Pro
									790						800
Ile	Arg	Ala	Asn	His	Ser	Leu	Asp	Val	Ser	Phe	Tyr	Phe	Arg	Thr	Ser
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Ala	Pro	Ser	Gly	Val	Phe	Leu	Glu	Asn	Met	Gly	Gly	Pro	Tyr	Cys	Gln
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Trp	Arg	Arg	Pro	Tyr	Val	Arg	Val	Glu	Leu	Asn	Thr	Ser	Arg	Asp	Val
				835					840						845
Val	Phe	Ala	Phe	Asp	Val	Gly	Asn	Gly	Asp	Glu	Asn	Leu	Thr	Val	His
									855						860
Ser	Asp	Asp	Phe	Glu	Phe	Asn	Asp	Asp	Glu	Trp	His	Leu	Val	Arg	Ala
									870						880

Glu Ile Asn Val Lys Gln Ala Arg Leu Arg Val Asp His Arg Pro Trp
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 Val Leu Arg Pro Met Pro Leu Gln Thr Tyr Ile Trp Met Glu Tyr Asp
 900 905 910
 Gln Pro Leu Tyr Val Gly Ser Ala Glu Leu Lys Arg Arg Pro Phe Val
 915 920 925
 Gly Cys Leu Arg Ala Met Arg Leu Asn Gly Val Thr Leu Asn Leu Glu
 930 935 940
 Gly Arg Ala Asn Ala Ser Glu Gly Thr Ser Pro Asn Cys Thr Gly His
 945 950 955 960
 Cys Ala His Pro Arg Leu Pro Cys Phe His Gly Gly Arg Cys Val Glu
 965 970 975
 Arg Tyr Ser Tyr Tyr Thr Cys Asp Cys Asp Leu Thr Ala Phe Asp Gly
 980 985 990
 Pro Tyr Cys Asn His Asp Ile Gly Gly Phe Phe Glu Pro Gly Thr Trp
 995 1000 1005
 Met Arg Tyr Asn Leu Gln Ser Ala Leu Arg Ser Ala Ala Arg Glu
 1010 1015 1020
 Phe Ser His Met Leu Ser Arg Pro Val Pro Gly Tyr Glu Pro Gly
 1025 1030 1035
 Tyr Ile Pro Gly Tyr Asp Thr Pro Gly Tyr Val Pro Gly Tyr His
 1040 1045 1050
 Gly Pro Gly Tyr Arg Leu Pro Asp Tyr Pro Arg Pro Gly Arg Pro
 1055 1060 1065
 Val Pro Gly Tyr Arg Gly Pro Val Tyr Asn Val Thr Gly Glu Glu
 1070 1075 1080
 Val Ser Phe Ser Phe Ser Thr Ser Ser Ala Pro Ala Val Leu Leu
 1085 1090 1095
 Tyr Val Ser Ser Phe Val Arg Asp Tyr Met Ala Val Leu Ile Lys
 1100 1105 1110
 Asp Asp Gly Thr Leu Gln Leu Arg Tyr Gln Leu Gly Thr Ser Pro
 1115 1120 1125
 Tyr Val Tyr Gln Leu Thr Thr Arg Pro Val Thr Asp Gly Gln Pro
 1130 1135 1140
 His Ser Ile Asn Ile Thr Arg Val Tyr Arg Asn Leu Phe Ile Gln
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 Val Asp Tyr Phe Pro Leu Thr Glu Gln Lys Phe Ser Leu Leu Val
 1160 1165 1170
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 1175 1180 1185
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 1190 1195 1200
 Pro Gly Phe Ser Gly Cys Leu Ser Gly Val Arg Phe Asn Asn Val
 1205 1210 1215
 Ala Pro Leu Lys Thr His Phe Arg Thr Pro Arg Pro Met Thr Ala
 1220 1225 1230
 Glu Leu Ala Glu Ala Leu Arg Val Gln Gly Glu Leu Ser Glu Ser
 1235 1240 1245

Asn Cys Gly Ala Met Pro Arg Leu Val Ser Glu Val Pro Pro Glu
 1250 1255 1260
 Leu Asp Pro Trp Tyr Leu Pro Pro Asp Phe Pro Tyr Tyr His Asp
 1265 1270 1275
 Glu Gly Trp Val Ala Ile Leu Leu Gly Phe Leu Val Ala Phe Leu
 1280 1285 1290
 Leu Leu Gly Leu Val Gly Met Leu Val Leu Phe Tyr Leu Gln Asn
 1295 1300 1305
 His Arg Tyr Lys Gly Ser Tyr His Thr Asn Glu Pro Lys Ala Ala
 1310 1315 1320
 His Glu Tyr His Pro Gly Ser Lys Pro Pro Leu Pro Thr Ser Gly
 1325 1330 1335
 Pro Ala Gln Val Pro Thr Pro Thr Ala Ala Pro Asn Gln Ala Pro
 1340 1345 1350
 Ala Ser Ala Pro Ala Pro Ala Pro Thr Pro Ala Pro Ala Pro Gly
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 1370 1375 1380

Glu

<210> 5
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 <212> PRT
 <213> Homo sapiens

<400> 5

Arg Ile Tyr Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly
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 20 25 30
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 35 40 45
 Ile Lys Glu Leu Arg Arg Leu Phe Leu Val Asp Leu Val Asp Ser Leu
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Lys
 65

<210> 6
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 <213> Artificial sequence

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<213> Unknown

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Val Leu Glu Glu Ser Ile Ala Val Glu Ser Glu Leu Tyr Ala Arg Phe
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Ile Arg
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<210> 12
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<400> 13

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			20					25					30		
Ser	Glu	Glu	Asp	Lys	Gly	Phe	Gly	Pro	Ile	Phe	Glu	Glu	Gln	Pro	Ile
		35					40					45			
Asn	Thr	Ile	Tyr	Pro	Glu	Glu	Ser	Leu	Glu	Gly	Lys	Val	Ser	Leu	Asn
	50					55					60				
Cys	Arg	Ala	Arg	Ala	Ser	Pro	Phe	Pro	Val	Tyr	Lys	Trp	Arg	Met	Asn
65					70					75					80
Asn	Gly	Asp	Val	Asp	Leu	Thr	Ser	Asp	Arg	Tyr	Ser	Met	Val	Gly	Gly
				85					90					95	
Asn	Leu	Val	Ile	Asn	Asn	Pro	Asp	Lys	Gln	Lys	Asp	Ala	Gly	Ile	Tyr
			100					105					110		
Tyr	Cys	Leu	Ala	Ser	Asn	Asn	Tyr	Gly	Met	Val	Arg	Ser	Thr	Glu	Ala
		115					120					125			
Thr	Leu	Ser	Phe	Gly	Tyr	Leu	Asp	Pro	Phe	Pro	Pro	Glu	Glu	Arg	Pro
	130					135					140				
Glu	Val	Arg	Val	Lys	Glu	Gly	Lys	Gly	Met	Val	Leu	Leu	Cys	Asp	Pro
145					150					155					160
Pro	Tyr	His	Phe	Pro	Asp	Asp	Leu	Ser	Tyr	Arg	Trp	Leu	Leu	Asn	Glu
				165					170					175	
Phe	Pro	Val	Phe	Ile	Thr	Met	Asp	Lys	Arg	Arg	Phe	Val	Ser	Gln	Thr
			180					185					190		
Asn	Gly	Asn	Leu	Tyr	Ile	Ala	Asn	Val	Glu	Ala	Ser	Asp	Lys	Gly	Asn
		195					200					205			
Tyr	Ser	Cys	Phe	Val	Ser	Ser	Pro	Ser	Ile	Thr	Lys	Ser	Val	Phe	Ser
	210					215					220				
Lys	Phe	Ile	Pro	Leu	Ile	Pro	Ile	Pro	Glu	Arg	Thr	Thr	Lys	Pro	Tyr
225					230					235					240
Pro	Ala	Asp	Ile	Val	Val	Gln	Phe	Lys	Asp	Val	Tyr	Ala	Leu	Met	Gly
				245					250					255	
Gln	Asn	Val	Thr	Leu	Glu	Cys	Phe	Ala	Leu	Gly	Asn	Pro	Val	Pro	Asp
			260					265					270		
Ile	Arg	Trp	Arg	Lys	Val	Leu	Glu	Pro	Met	Pro	Ser	Thr	Ala	Glu	Ile
		275					280					285			
Ser	Thr	Ser	Gly	Ala	Val	Leu	Lys	Ile	Phe	Asn	Ile	Gln	Leu	Glu	Asp
	290					295					300				
Glu	Gly	Ile	Tyr	Glu	Cys	Glu	Ala	Glu	Asn	Ile	Arg	Gly	Lys	Asp	Lys

305					310						315				320
His	Gln	Ala	Arg	Ile	Tyr	Val	Gln	Ala	Phe	Pro	Glu	Trp	Val	Glu	His
				325					330					335	
Ile	Asn	Asp	Thr	Glu	Val	Asp	Ile	Gly	Ser	Asp	Leu	Tyr	Trp	Pro	Cys
			340					345					350		
Val	Ala	Thr	Gly	Lys	Pro	Ile	Pro	Thr	Ile	Arg	Trp	Leu	Lys	Asn	Gly
		355					360					365			
Tyr	Ala	Tyr	His	Lys	Gly	Glu	Leu	Arg	Leu	Tyr	Asp	Val	Thr	Phe	Glu
	370					375					380				
Asn	Ala	Gly	Met	Tyr	Gln	Cys	Ile	Ala	Glu	Asn	Thr	Tyr	Gly	Ala	Ile
385					390					395					400
Tyr	Ala	Asn	Ala	Glu	Leu	Lys	Ile	Leu	Ala	Leu	Ala	Pro	Thr	Phe	Glu
				405					410					415	
Met	Asn	Pro	Met	Lys	Lys	Lys	Ile	Leu	Ala	Ala	Lys	Gly	Gly	Arg	Val
			420					425					430		
Ile	Ile	Glu	Cys	Lys	Pro	Lys	Ala	Ala	Pro	Lys	Pro	Lys	Phe	Ser	Trp
		435					440					445			
Ser	Lys	Gly	Thr	Glu	Trp	Leu	Val	Asn	Ser	Ser	Arg	Ile	Leu	Ile	Trp
	450					455					460				
Glu	Asp	Gly	Ser	Leu	Glu	Ile	Asn	Asn	Ile	Thr	Arg	Asn	Asp	Gly	Gly
465					470					475					480
Ile	Tyr	Thr	Cys	Phe	Ala	Glu	Asn	Asn	Arg	Gly	Lys	Ala	Asn	Ser	Thr
				485					490					495	
Gly	Thr	Leu	Val	Ile	Thr	Asp	Pro	Thr	Arg	Ile	Ile	Leu	Ala	Pro	Ile
			500					505					510		
Asn	Ala	Asp	Ile	Thr	Val	Gly	Glu	Asn	Ala	Thr	Met	Gln	Cys	Ala	Ala
		515					520					525			
Ser	Phe	Asp	Pro	Ala	Leu	Asp	Leu	Thr	Phe	Val	Trp	Ser	Phe	Asn	Gly
	530					535					540				
Tyr	Val	Ile	Asp	Phe	Asn	Lys	Glu	Asn	Ile	His	Tyr	Gln	Arg	Asn	Phe
545					550					555					560
Met	Leu	Asp	Ser	Asn	Gly	Glu	Leu	Leu	Ile	Arg	Asn	Ala	Gln	Leu	Lys
				565					570					575	
His	Ala	Gly	Arg	Tyr	Thr	Cys	Thr	Ala	Gln	Thr	Ile	Val	Asp	Asn	Ser
			580					585					590		
Ser	Ala	Ser	Ala	Asp	Leu	Val	Val	Arg	Gly	Pro	Pro	Gly	Pro	Pro	Gly
		595					600					605			
Gly	Leu	Arg	Ile	Glu	Asp	Ile	Arg	Ala	Thr	Ser	Val	Ala	Leu	Thr	Trp
	610					615					620				
Ser	Arg	Gly	Ser	Asp	Asn	His	Ser	Pro	Ile	Ser	Lys	Tyr	Thr	Ile	Gln
625					630					635					640
Thr	Lys	Thr	Ile	Leu	Ser	Asp	Asp	Trp	Lys	Asp	Ala	Lys	Thr	Asp	Pro
				645					650					655	
Pro	Ile	Ile	Glu	Gly	Asn	Met	Glu	Ala	Ala	Arg	Ala	Val	Asp	Leu	Ile
			660					665					670		
Pro	Trp	Met	Glu	Tyr	Glu	Phe	Arg	Val	Val	Ala	Thr	Asn	Thr	Leu	Gly
		675					680					685			

Arg Gly Glu Pro Ser Ile Pro Ser Asn Arg Ile Lys Thr Asp Gly Ala
 690 695 700
 Ala Pro Asn Val Ala Pro Ser Asp Val Gly Gly Gly Gly Gly Arg Asn
 705 710 715 720
 Arg Glu Leu Thr Ile Thr Trp Ala Pro Leu Ser Arg Glu Tyr His Tyr
 725 730 735
 Gly Asn Asn Phe Gly Tyr Ile Val Ala Phe Lys Pro Phe Asp Gly Glu
 740 745 750
 Glu Trp Lys Lys Val Thr Val Thr Asn Pro Asp Thr Gly Arg Tyr Val
 755 760 765
 His Lys Asp Glu Thr Met Ser Pro Ser Thr Ala Phe Gln Val Lys Val
 770 775 780
 Lys Ala Phe Asn Asn Lys Gly Asp Gly Pro Tyr Ser Leu Leu Ala Val
 785 790 795 800
 Ile Asn Ser Ala Gln Asp Ala Pro Ser Glu Ala Pro Thr Glu Val Gly
 805 810 815
 Val Lys Val Leu Ser Ser Ser Glu Ile Ser Val His Trp Glu His Val
 820 825 830
 Leu Glu Lys Ile Val Glu Ser Tyr Gln Ile Arg Tyr Trp Ala Ala His
 835 840 845
 Asp Lys Glu Glu Ala Ala Asn Arg Val Gln Val Thr Ser Gln Glu Tyr
 850 855 860
 Ser Ala Arg Leu Glu Asn Leu Leu Pro Asp Thr Gln Tyr Phe Ile Glu
 865 870 875 880
 Val Gly Ala Cys Asn Ser Ala Gly Cys Gly Pro Pro Ser Asp Met Ile
 885 890 895
 Glu Ala Phe Thr Lys Lys Ala Pro Pro Ser Gln Pro Pro Arg Ile Ile
 900 905 910
 Ser Ser Val Arg Ser Gly Ser Arg Tyr Ile Ile Thr Trp Asp His Val
 915 920 925
 Val Ala Leu Ser Asn Glu Ser Thr Val Thr Gly Tyr Lys Val Leu Tyr
 930 935 940
 Arg Pro Asp Gly Gln His Asp Gly Lys Leu Tyr Ser Thr His Lys His
 945 950 955 960
 Ser Ile Glu Val Pro Ile Pro Arg Asp Gly Glu Tyr Val Val Glu Val
 965 970 975
 Arg Ala His Ser Asp Gly Gly Asp Gly Val Val Ser Gln Val Lys Ile
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 Ser Gly Ala Pro Thr Leu Ser Pro Ser Leu Leu Gly Leu Leu Leu Pro
 995 1000 1005
 Ala Phe Gly Ile Leu Val Tyr Leu Glu Phe
 1010 1015

<210> 14
 <211> 1028
 <212> PRT
 <213> Homo sapiens
 <400> 14

Met Arg Leu Leu Trp Lys Leu Val Ile Leu Leu Pro Leu Ile Asn Ser

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His Asp Val Ile 35	Phe Pro Leu Asp 40	Leu Ser Lys Ser 45	Glu Val Ile Leu
Asn Cys Ala Ala 50	Asn Gly Tyr Pro 55	Ser Pro His Tyr 60	Arg Trp Lys Gln
Asn Gly Thr Asp 65	Ile Asp Phe Thr 70	Met Ser Tyr His 75	Tyr Arg Leu Asp 80
Gly Gly Ser Leu 85	Ala Ile Asn Ser 90	Pro His Thr Asp 95	Gln Asp Ile Gly
Met Tyr Gln Cys 100	Leu Ala Thr Asn 105	Leu Leu Gly Thr 110	Ile Leu Ser Arg
Lys Ala Lys Leu 115	Gln Phe Ala Tyr 120	Ile Glu Asp Phe 125	Glu Thr Lys Thr
Arg Ser Thr Val 130	Ser Val Arg Glu 135	Gly Gln Gly Val 140	Val Val Leu Leu Cys
Gly Pro Pro Pro 145	His Phe Gly Asp 150	Leu Ser Tyr Ala 155	Trp Thr Phe Asn 160
Asp Asn Pro Leu 165	Tyr Val Gln Glu 170	Asn Arg Arg Phe 175	Val Ser Gln
Glu Thr Gly Asn 180	Leu Tyr Ile Ala 185	Lys Val Glu Pro 190	Ser Asp Val Gly
Asn Tyr Thr Cys 195	Phe Ile Thr Asn 200	Lys Glu Ala Gln 205	Arg Ser Val Gln
Gly Pro Pro Thr 210	Pro Leu Val Gln 215	Arg Thr Asp Gly 220	Val Met Gly Glu
Tyr Glu Pro Lys 225	Ile Glu Val Arg 230	Phe Pro Glu Thr 235	Ile Gln Ala Ala 240
Lys Asp Ser Ser 245	Val Lys Leu Glu 250	Cys Phe Ala Leu 255	Gly Asn Pro Val
Pro Asp Ile Ser 260	Trp Arg Arg Leu 265	Asp Gly Ser Pro 270	Leu Pro Gly Lys
Val Lys Tyr Ser 275	Lys Ser Gln Ala 280	Ile Leu Glu Ile 285	Pro Asn Phe Gln
Gln Glu Asp Glu 290	Gly Phe Tyr Glu 295	Cys Ile Ala Ser 300	Asn Leu Arg Gly
Arg Asn Leu Ala 305	Lys Gly Gln Leu 310	Ile Phe Tyr Ala 315	Pro Pro Glu Trp 320
Glu Gln Lys Ile 325	Gln Asn Thr His 330	Leu Ser Ile Tyr 335	Asp Asn Leu Leu
Trp Glu Cys Lys 340	Ala Ser Gly Lys 345	Pro Asn Pro Trp 350	Tyr Thr Trp Leu
Lys Asn Gly Glu 355	Arg Leu Asn Pro 360	Glu Glu Arg Ile 365	Gln Ile Glu Asn
Gly Thr Leu Ile 370	Ile Thr Met Leu 375	Asn Val Ser Asp 380	Ser Gly Val Tyr

Gln Cys Ala Ala Glu Asn Lys Tyr Gln Ile Ile Tyr Ala Asn Ala Glu
 385 390 395 400
 Leu Arg Val Leu Ala Ser Ala Pro Asp Phe Ser Lys Ser Pro Val Lys
 405 410 415
 Lys Lys Ser Phe Val Gln Val Gly Gly Asp Ile Val Ile Gly Cys Lys
 420 425 430
 Pro Asn Ala Phe Pro Arg Ala Ala Ile Ser Trp Lys Arg Gly Thr Glu
 435 440 445
 Thr Leu Arg Gln Ser Lys Arg Ile Phe Leu Leu Glu Asp Gly Ser Leu
 450 455 460
 Lys Ile Tyr Asn Ile Thr Arg Ser Asp Ala Gly Ser Tyr Thr Cys Ile
 465 470 475 480
 Ala Thr Asn Gln Phe Gly Thr Ala Lys Asn Thr Gly Ser Leu Ile Val
 485 490 495
 Lys Glu Arg Thr Val Ile Thr Val Pro Pro Ser Lys Met Asp Val Thr
 500 505 510
 Val Gly Glu Ser Ile Val Leu Pro Cys Gln Val Ser His Asp Pro Ser
 515 520 525
 Ile Glu Val Val Phe Val Trp Phe Phe Asn Gly Asp Val Ile Asp Leu
 530 535 540
 Lys Lys Gly Val Ala His Phe Glu Arg Ile Gly Gly Glu Ser Val Gly
 545 550 555 560
 Asp Leu Met Ile Arg Asn Ile Gln Leu His His Ser Gly Lys Tyr Leu
 565 570 575
 Cys Thr Val Gln Thr Thr Leu Glu Ser Leu Ser Ala Val Ala Asp Ile
 580 585 590
 Ile Val Arg Gly Pro Pro Gly Pro Pro Glu Asp Val Gln Val Glu Asp
 595 600 605
 Ile Ser Ser Thr Thr Ser Gln Leu Ser Trp Arg Ala Gly Pro Asp Asn
 610 615 620
 Asn Ser Pro Ile Gln Ile Phe Thr Ile Gln Thr Arg Thr Pro Phe Ser
 625 630 635 640
 Val Gly Trp Gln Ala Val Ala Thr Val Pro Glu Ile Leu Asn Gly Lys
 645 650 655
 Thr Tyr Asn Ala Thr Val Val Gly Leu Ser Pro Trp Val Glu Tyr Glu
 660 665 670
 Phe Arg Val Val Ala Gly Asn Ser Ile Gly Ile Gly Glu Pro Ser Glu
 675 680 685
 Pro Ser Glu Leu Leu Arg Thr Lys Ala Ser Val Pro Val Val Ala Pro
 690 695 700
 Val Asn Ile His Gly Gly Gly Gly Ser Arg Ser Glu Leu Val Ile Thr
 705 710 715 720
 Trp Glu Ser Ile Pro Glu Glu Leu Gln Asn Gly Glu Gly Phe Gly Tyr
 725 730 735
 Ile Ile Met Phe Arg Pro Val Gly Ser Thr Thr Trp Ser Lys Glu Lys
 740 745 750
 Val Ser Ser Val Glu Ser Ser Arg Phe Val Tyr Arg Asn Glu Ser Ile
 755 760 765

Ile Pro Leu Ser Pro Phe Glu Val Lys Val Gly Val Tyr Asn Asn Glu
 770 775 780
 Gly Glu Gly Ser Leu Ser Thr Val Thr Ile Val Tyr Ser Gly Glu Asp
 785 790 795 800
 Glu Pro Gln Leu Ala Pro Arg Gly Thr Ser Leu Gln Ser Phe Ser Ala
 805 810 815
 Ser Glu Met Glu Val Ser Trp Asn Ala Ile Ala Trp Asn Arg Asn Thr
 820 825 830
 Gly Arg Val Leu Gly Tyr Glu Val Leu Tyr Trp Thr Asp Asp Ser Lys
 835 840 845
 Glu Ser Met Ile Gly Lys Ile Arg Val Ser Gly Asn Val Thr Thr Lys
 850 855 860
 Asn Ile Thr Gly Leu Lys Ala Asn Thr Ile Tyr Phe Ala Ser Val Arg
 865 870 875 880
 Ala Tyr Asn Thr Ala Gly Thr Gly Pro Ser Ser Pro Pro Val Asn Val
 885 890 895
 Thr Thr Lys Lys Ser Pro Pro Ser Gln Pro Pro Ala Asn Ile Ala Trp
 900 905 910
 Lys Leu Thr Asn Ser Lys Leu Cys Leu Asn Trp Glu His Val Lys Thr
 915 920 925
 Met Glu Asn Glu Ser Glu Val Leu Gly Tyr Lys Ile Leu Tyr Arg Gln
 930 935 940
 Asn Arg Gln Ser Lys Thr His Ile Leu Glu Thr Asn Asn Thr Ser Ala
 945 950 955 960
 Glu Leu Leu Val Pro Phe Glu Glu Asp Tyr Leu Ile Glu Ile Arg Thr
 965 970 975
 Val Ser Asp Gly Gly Asp Gly Ser Ser Ser Glu Glu Ile Arg Ile Pro
 980 985 990
 Lys Met Ser Ser Leu Ser Ser Arg Gly Ile Gln Phe Leu Glu Pro Ser
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 Ile Gln Pro Leu Ile
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 <222> (891)..(891)
 <223> Xaa is uncertain

 <400> 15

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 Leu Ala Ala Arg Gly Pro Arg Cys Ser Gln Pro Gly Glu Thr Cys Leu
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 Asn Gly Gly Lys Cys Glu Ala Ala Asn Gly Thr Glu Ala Cys Val Cys

35					40					45					
Gly	Gly	Ala	Phe	Val	Gly	Pro	Arg	Cys	Gln	Asp	Pro	Asn	Pro	Cys	Leu
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Ser	Thr	Pro	Cys	Lys	Asn	Ala	Gly	Thr	Cys	His	Val	Val	Asp	Arg	Arg
65					70					75					80
Gly	Val	Ala	Asp	Tyr	Ala	Cys	Ser	Cys	Ala	Leu	Gly	Phe	Ser	Gly	Pro
				85					90					95	
Leu	Cys	Leu	Thr	Pro	Leu	Asp	Asn	Ala	Cys	Leu	Thr	Asn	Pro	Cys	Arg
			100					105					110		
Asn	Gly	Gly	Thr	Cys	Asp	Leu	Leu	Thr	Leu	Thr	Glu	Tyr	Lys	Cys	Arg
		115					120					125			
Cys	Pro	Pro	Gly	Trp	Ser	Gly	Lys	Ser	Cys	Gln	Gln	Ala	Asp	Pro	Cys
	130					135					140				
Ala	Ser	Asn	Pro	Cys	Ala	Asn	Gly	Gly	Gln	Cys	Leu	Pro	Phe	Glu	Ala
145					150					155					160
Ser	Tyr	Ile	Cys	His	Cys	Pro	Pro	Ser	Phe	His	Gly	Pro	Thr	Cys	Arg
				165					170					175	
Gln	Asp	Val	Asn	Glu	Cys	Gly	Gln	Lys	Pro	Arg	Leu	Cys	Arg	His	Gly
			180					185					190		
Gly	Thr	Cys	His	Asn	Glu	Val	Gly	Ser	Tyr	Arg	Cys	Val	Cys	Arg	Ala
		195					200					205			
Thr	His	Thr	Gly	Pro	Asn	Cys	Glu	Arg	Pro	Tyr	Val	Pro	Cys	Ser	Pro
	210					215					220				
Ser	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Arg	Pro	Thr	Gly	Asp	Val	Thr
225					230					235					240
His	Glu	Cys	Ala	Cys	Leu	Pro	Gly	Phe	Thr	Gly	Gln	Asn	Cys	Glu	Glu
				245					250					255	
Asn	Ile	Asp	Asp	Cys	Pro	Gly	Asn	Asn	Cys	Lys	Asn	Gly	Gly	Ala	Cys
			260					265					270		
Val	Asp	Gly	Val	Asn	Thr	Tyr	Asn	Cys	Pro	Cys	Pro	Pro	Glu	Trp	Thr
		275					280					285			
Gly	Gln	Tyr	Cys	Thr	Glu	Asp	Val	Asp	Glu	Cys	Gln	Leu	Met	Pro	Asn
	290					295					300				
Ala	Cys	Gln	Asn	Gly	Gly	Thr	Cys	His	Asn	Thr	His	Gly	Gly	Tyr	Asn
305					310					315					320
Cys	Val	Cys	Val	Asn	Gly	Trp	Thr	Gly	Glu	Asp	Cys	Ser	Glu	Asn	Ile
				325					330					335	
Asp	Asp	Cys	Ala	Ser	Ala	Ala	Cys	Phe	His	Gly	Ala	Thr	Cys	His	Asp
			340					345					350		
Arg	Val	Ala	Ser	Phe	Tyr	Cys	Glu	Cys	Pro	His	Gly	Arg	Thr	Gly	Leu
		355					360					365			
Leu	Cys	His	Leu	Asn	Asp	Ala	Cys	Ile	Ser	Asn	Pro	Cys	Asn	Glu	Gly
	370					375					380				
Ser	Asn	Cys	Asp	Thr	Asn	Pro	Val	Asn	Gly	Lys	Ala	Ile	Cys	Thr	Cys
385					390					395					400
Pro	Ser	Gly	Tyr	Thr	Gly	Pro	Ala	Cys	Ser	Gln	Asp	Val	Asp	Glu	Cys
				405					410					415	

Ser Leu Gly Ala Asn Pro Cys Glu His Ala Gly Lys Cys Ile Asn Thr
 420 425 430
 Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln Gly Tyr Thr Gly Pro Arg
 435 440 445
 Cys Glu Ile Asp Val Asn Glu Cys Val Ser Asn Pro Cys Gln Asn Asp
 450 455 460
 Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe Gln Cys Met Cys Met Pro
 465 470 475 480
 Gly Tyr Glu Gly Val His Cys Glu Val Asn Thr Asp Glu Cys Ala Ser
 485 490 495
 Ser Pro Cys Leu His Asn Gly Arg Cys Leu Asp Lys Ile Asn Glu Phe
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 Gln Cys Glu Cys Pro Thr Gly Phe Thr Gly His Leu Cys Gln Tyr Asp
 515 520 525
 Val Asp Glu Cys Ala Ser Thr Pro Cys Lys Asn Gly Ala Lys Cys Leu
 530 535 540
 Asp Gly Pro Asn Thr Tyr Thr Cys Val Cys Thr Glu Gly Tyr Thr Gly
 545 550 555 560
 Thr His Cys Glu Val Asp Ile Asp Glu Cys Asp Pro Asp Pro Cys His
 565 570 575
 Tyr Gly Ser Cys Lys Asp Gly Val Ala Thr Phe Thr Cys Leu Cys Arg
 580 585 590
 Pro Gly Tyr Thr Gly His His Cys Glu Thr Asn Ile Asn Glu Cys Ser
 595 600 605
 Ser Gln Pro Cys Arg Leu Arg Gly Thr Cys Gln Asp Pro Asp Asn Ala
 610 615 620
 Tyr Leu Cys Phe Cys Leu Lys Gly Thr Thr Gly Pro Asn Cys Glu Ile
 625 630 635 640
 Asn Leu Asp Asp Cys Ala Ser Ser Pro Cys Asp Ser Gly Thr Cys Leu
 645 650 655
 Asp Lys Ile Asp Gly Tyr Glu Cys Ala Cys Glu Pro Gly Tyr Thr Gly
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 Ser Met Cys Asn Ser Asn Ile Asp Glu Cys Ala Gly Asn Pro Cys His
 675 680 685
 Asn Gly Gly Thr Cys Glu Asp Gly Ile Asn Gly Phe Thr Cys Arg Cys
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 Pro Glu Gly Tyr His Asp Pro Thr Cys Leu Ser Glu Val Asn Glu Cys
 705 710 715 720
 Asn Ser Asn Pro Cys Val His Gly Ala Cys Arg Asp Ser Leu Asn Gly
 725 730 735
 Tyr Lys Cys Asp Cys Asp Pro Gly Trp Ser Gly Thr Asn Cys Asp Ile
 740 745 750
 Asn Asn Asn Glu Cys Glu Ser Asn Pro Cys Val Asn Gly Gly Thr Cys
 755 760 765
 Lys Asp Met Thr Ser Gly Ile Val Cys Thr Cys Arg Glu Gly Phe Ser
 770 775 780
 Gly Pro Asn Cys Gln Thr Asn Ile Asn Glu Cys Ala Ser Asn Pro Cys
 785 790 795 800

Leu Asn Lys Gly Thr Cys Ile Asp Asp Val Ala Gly Tyr Lys Cys Asn
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 Cys Leu Leu Pro Tyr Thr Gly Ala Thr Cys Glu Val Val Leu Ala Pro
 820 825 830
 Cys Ala Pro Ser Pro Cys Arg Asn Gly Gly Glu Cys Arg Gln Ser Glu
 835 840 845
 Asp Tyr Glu Ser Phe Ser Cys Val Cys Pro Thr Ala Gly Ala Lys Gly
 850 855 860
 Gln Thr Cys Glu Val Asp Ile Asn Glu Cys Val Leu Ser Pro Cys Arg
 865 870 875 880
 His Gly Ala Ser Cys Gln Asn Thr His Gly Xaa Tyr Arg Cys His Cys
 885 890 895
 Gln Ala Gly Tyr Ser Gly Arg Asn Cys Glu Thr Asp Ile Asp Asp Cys
 900 905 910
 Arg Pro Asn Pro Cys His Asn Gly Gly Ser Cys Thr Asp Gly Ile Asn
 915 920 925
 Thr Ala Phe Cys Asp Cys Leu Pro Gly Phe Arg Gly Thr Phe Cys Glu
 930 935 940
 Glu Asp Ile Asn Glu Cys Ala Ser Asp Pro Cys Arg Asn Gly Ala Asn
 945 950 955 960
 Cys Thr Asp Cys Val Asp Ser Tyr Thr Cys Thr Cys Pro Ala Gly Phe
 965 970 975
 Ser Gly Ile His Cys Glu Asn Asn Thr Pro Asp Cys Thr Glu Ser Ser
 980 985 990
 Cys Phe Asn Gly Gly Thr Cys Val Asp Gly Ile Asn Ser Phe Thr Cys
 995 1000 1005
 Leu Cys Pro Pro Gly Phe Thr Gly Ser Tyr Cys Gln His Val Val
 1010 1015 1020
 Asn Glu Cys Asp Ser Arg Pro Cys Leu Leu Gly Gly Thr Cys Gln
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 Asp Gly Arg Gly Leu His Arg Cys Thr Cys Pro Gln Gly Tyr Thr
 1040 1045 1050
 Gly Pro Asn Cys Gln Asn Leu Val His Trp Cys Asp Ser Ser Pro
 1055 1060 1065
 Cys Lys Asn Gly Gly Lys Cys Trp Gln Thr His Thr Gln Tyr Arg
 1070 1075 1080
 Cys Glu Cys Pro Ser Gly Trp Thr Gly Leu Tyr Cys Asp Val Pro
 1085 1090 1095
 Ser Val Ser Cys Glu Val Ala Ala Gln Arg Gln Gly Val Asp Val
 1100 1105 1110
 Ala Arg Leu Cys Gln His Gly Gly Leu Cys Val Asp Ala Gly Asn
 1115 1120 1125
 Thr His His Cys Arg Cys Gln Ala Gly Tyr Thr Gly Ser Tyr Cys
 1130 1135 1140
 Glu Asp Leu Val Asp Glu Cys Ser Pro Ser Pro Cys Gln Asn Gly
 1145 1150 1155
 Ala Thr Cys Thr Asp Tyr Leu Gly Gly Tyr Ser Cys Lys Cys Val

1160	1165	1170
Ala Gly Tyr His Gly Val	Asn Cys Ser Glu Glu	Ile Asp Glu Cys
1175	1180	1185
Leu Ser His Pro Cys Gln	Asn Gly Gly Thr Cys	Leu Asp Leu Pro
1190	1195	1200
Asn Thr Tyr Lys Cys Ser	Cys Pro Arg Gly Thr	Gln Gly Val His
1205	1210	1215
Cys Glu Ile Asn Val Asp	Asp Cys Asn Pro Pro	Val Asp Pro Val
1220	1225	1230
Ser Arg Ser Pro Lys Cys	Phe Asn Asn Gly Thr	Cys Val Asp Gln
1235	1240	1245
Val Gly Gly Tyr Ser Cys	Thr Cys Pro Pro Gly	Phe Val Gly Glu
1250	1255	1260
Arg Cys Glu Gly Asp Val	Asn Glu Cys Leu Ser	Asn Pro Cys Asp
1265	1270	1275
Ala Arg Gly Thr Gln Asn	Cys Val Gln Arg Val	Asn Asp Phe His
1280	1285	1290
Cys Glu Cys Arg Ala Gly	His Thr Gly Arg Arg	Cys Glu Ser Val
1295	1300	1305
Ile Asn Gly Cys Lys Gly	Lys Pro Cys Lys Asn	Gly Gly Thr Cys
1310	1315	1320
Ala Val Ala Ser Asn Thr	Ala Arg Gly Phe Ile	Cys Lys Cys Pro
1325	1330	1335
Ala Gly Phe Glu Gly Ala	Thr Cys Glu Asn Asp	Ala Arg Thr Cys
1340	1345	1350
Gly Ser Leu Arg Cys Leu	Asn Gly Gly Thr Cys	Ile Ser Gly Pro
1355	1360	1365
Arg Ser Pro Thr Cys Leu	Cys Leu Gly Pro Phe	Thr Gly Pro Glu
1370	1375	1380
Cys Gln Phe Pro Ala Ser	Ser Pro Cys Leu Gly	Gly Asn Pro Cys
1385	1390	1395
Tyr Asn Gln Gly Thr Cys	Glu Pro Thr Ser Glu	Ser Pro Phe Tyr
1400	1405	1410
Arg Cys Leu Cys Pro Ala	Lys Phe Asn Gly Leu	Leu Cys His Ile
1415	1420	1425
Leu Asp Tyr Ser Phe Gly	Gly Gly Ala Gly Arg	Asp Ile Pro Pro
1430	1435	1440
Pro Leu Ile Glu Glu Ala	Cys Glu Leu Pro Glu	Cys Gln Glu Asp
1445	1450	1455
Ala Gly Asn Lys Val Cys	Ser Leu Gln Cys Asn	Asn His Ala Cys
1460	1465	1470
Gly Trp Asp Gly Gly Asp	Cys Ser Leu Asn Phe	Asn Asp Pro Trp
1475	1480	1485
Lys Asn Cys Thr Gln Ser	Leu Gln Cys Trp Lys	Tyr Phe Ser Asp
1490	1495	1500
Gly His Cys Asp Ser Gln	Cys Asn Ser Ala Gly	Cys Leu Phe Asp
1505	1510	1515

Gly	Phe	Asp	Cys	Gln	Arg	Ala	Glu	Gly	Gln	Cys	Asn	Pro	Leu	Tyr
1520						1525					1530			
Asp	Gln	Tyr	Cys	Lys	Asp	His	Phe	Ser	Asp	Gly	His	Cys	Asp	Gln
1535						1540					1545			
Gly	Cys	Asn	Ser	Ala	Glu	Cys	Glu	Trp	Asp	Gly	Leu	Asp	Cys	Ala
1550						1555					1560			
Glu	His	Val	Pro	Glu	Arg	Leu	Ala	Ala	Gly	Thr	Leu	Val	Val	Val
1565						1570					1575			
Val	Leu	Met	Pro	Pro	Glu	Gln	Leu	Arg	Asn	Ser	Ser	Phe	His	Phe
1580						1585					1590			
Leu	Arg	Glu	Leu	Ser	Arg	Val	Leu	His	Thr	Asn	Val	Val	Phe	Lys
1595						1600					1605			
Arg	Asp	Ala	His	Gly	Gln	Gln	Met	Ile	Phe	Pro	Tyr	Tyr	Gly	Arg
1610						1615					1620			
Glu	Glu	Glu	Leu	Arg	Lys	His	Pro	Ile	Lys	Arg	Ala	Ala	Glu	Gly
1625						1630					1635			
Trp	Ala	Ala	Pro	Asp	Ala	Leu	Leu	Gly	Gln	Val	Lys	Ala	Ser	Leu
1640						1645					1650			
Leu	Pro	Gly	Gly	Ser	Glu	Gly	Gly	Arg	Arg	Arg	Arg	Glu	Leu	Asp
1655						1660					1665			
Pro	Met	Asp	Val	Arg	Gly	Ser	Ile	Val	Tyr	Leu	Glu	Ile	Asp	Asn
1670						1675					1680			
Arg	Gln	Cys	Val	Gln	Ala	Ser	Ser	Gln	Cys	Phe	Gln	Ser	Ala	Thr
1685						1690					1695			
Asp	Val	Ala	Ala	Phe	Leu	Gly	Ala	Leu	Ala	Ser	Leu	Gly	Ser	Leu
1700						1705					1710			
Asn	Ile	Pro	Tyr	Lys	Ile	Glu	Ala	Val	Gln	Ser	Glu	Thr	Val	Glu
1715						1720					1725			
Pro	Pro	Pro	Pro	Ala	Gln	Leu	His	Phe	Met	Tyr	Val	Ala	Ala	Ala
1730						1735					1740			
Ala	Phe	Val	Leu	Leu	Phe	Phe	Val	Gly	Cys	Gly	Val	Leu	Leu	Ser
1745						1750					1755			
Arg	Lys	Arg	Arg	Arg	Gln	His	Gly	Gln	Leu	Trp	Phe	Pro	Glu	Gly
1760						1765					1770			
Phe	Lys	Val	Ser	Glu	Ala	Ser	Lys	Lys	Lys	Arg	Arg	Glu	Pro	Leu
1775						1780					1785			
Gly	Glu	Asp	Ser	Val	Gly	Leu	Lys	Pro	Leu	Lys	Asn	Ala	Ser	Asp
1790						1795					1800			
Gly	Ala	Leu	Met	Asp	Asp	Asn	Gln	Asn	Glu	Trp	Gly	Asp	Glu	Asp
1805						1810					1815			
Leu	Glu	Thr	Lys	Lys	Phe	Arg	Phe	Glu	Glu	Pro	Val	Val	Leu	Pro
1820						1825					1830			
Asp	Leu	Asp	Asp	Gln	Thr	Asp	His	Arg	Gln	Trp	Thr	Gln	Gln	His
1835						1840					1845			
Leu	Asp	Ala	Ala	Asp	Leu	Arg	Met	Ser	Ala	Met	Ala	Pro	Thr	Pro
1850						1855					1860			
Pro	Gln	Gly	Glu	Val	Asp	Ala	Asp	Cys	Met	Asp	Val	Asn	Val	Arg
1865						1870					1875			

Gly	Pro	Asp	Gly	Phe	Thr	Pro	Leu	Met	Ile	Ala	Ser	Cys	Ser	Gly
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Gly	Gly	Leu	Glu	Thr	Gly	Asn	Ser	Glu	Glu	Glu	Glu	Asp	Ala	Pro
1895						1900					1905			
Ala	Val	Ile	Ser	Asp	Phe	Ile	Tyr	Gln	Gly	Ala	Ser	Leu	His	Asn
1910						1915					1920			
Gln	Thr	Asp	Arg	Thr	Gly	Glu	Thr	Ala	Leu	His	Leu	Ala	Ala	Arg
1925						1930					1935			
Tyr	Ser	Arg	Ser	Asp	Ala	Ala	Lys	Arg	Leu	Leu	Glu	Ala	Ser	Ala
1940						1945					1950			
Asp	Ala	Asn	Ile	Gln	Asp	Asn	Met	Gly	Arg	Thr	Pro	Leu	His	Ala
1955						1960					1965			
Ala	Val	Ser	Ala	Asp	Ala	Gln	Gly	Val	Phe	Gln	Ile	Leu	Ile	Arg
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Asn	Arg	Ala	Thr	Asp	Leu	Asp	Ala	Arg	Met	His	Asp	Gly	Thr	Thr
1985						1990					1995			
Pro	Leu	Ile	Leu	Ala	Ala	Arg	Leu	Ala	Val	Glu	Gly	Met	Leu	Glu
2000						2005					2010			
Asp	Leu	Ile	Asn	Ser	His	Ala	Asp	Val	Asn	Ala	Val	Asp	Asp	Leu
2015						2020					2025			
Gly	Lys	Ser	Ala	Leu	His	Trp	Ala	Ala	Ala	Val	Asn	Asn	Val	Asp
2030						2035					2040			
Ala	Ala	Val	Val	Leu	Leu	Lys	Asn	Gly	Ala	Asn	Lys	Asp	Met	Gln
2045						2050					2055			
Asn	Asn	Arg	Glu	Glu	Thr	Pro	Leu	Phe	Leu	Ala	Ala	Arg	Glu	Gly
2060						2065					2070			
Ser	Tyr	Glu	Thr	Ala	Lys	Val	Leu	Leu	Asp	His	Phe	Ala	Asn	Arg
2075						2080					2085			
Asp	Ile	Thr	Asp	His	Met	Asp	Arg	Leu	Pro	Arg	Asp	Ile	Ala	Gln
2090						2095					2100			
Glu	Arg	Met	His	His	Asp	Ile	Val	Arg	Leu	Leu	Asp	Glu	Tyr	Asn
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Leu	Val	Arg	Ser	Pro	Gln	Leu	His	Gly	Ala	Pro	Leu	Gly	Gly	Thr
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Pro	Thr	Leu	Ser	Pro	Pro	Leu	Cys	Ser	Pro	Asn	Gly	Tyr	Leu	Gly
2135						2140					2145			
Ser	Leu	Lys	Pro	Gly	Val	Gln	Gly	Lys	Lys	Val	Arg	Lys	Pro	Ser
2150						2155					2160			
Ser	Lys	Gly	Leu	Ala	Cys	Gly	Ser	Lys	Glu	Ala	Lys	Asp	Leu	Lys
2165						2170					2175			
Ala	Arg	Arg	Lys	Lys	Ser	Gln	Asp	Gly	Lys	Gly	Cys	Leu	Leu	Asp
2180						2185					2190			
Ser	Ser	Gly	Met	Leu	Ser	Pro	Val	Asp	Ser	Leu	Glu	Ser	Pro	His
2195						2200					2205			
Gly	Tyr	Leu	Ser	Asp	Val	Ala	Ser	Pro	Pro	Leu	Leu	Pro	Ser	Pro
2210						2215					2220			
Phe	Gln	Gln	Ser	Pro	Ser	Val	Pro	Leu	Asn	His	Leu	Pro	Gly	Met

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Pro Asp Thr His Leu Gly	Ile Gly His Leu Asn	Val Ala Ala Lys		
2240	2245	2250		
Pro Glu Met Ala Ala Leu	Gly Gly Gly Arg	Leu Ala Phe Glu		
2255	2260	2265		
Thr Gly Pro Pro Arg Leu	Ser His Leu Pro Val	Ala Ser Gly Thr		
2270	2275	2280		
Ser Thr Val Leu Gly Ser	Ser Ser Gly Gly Ala	Leu Asn Phe Thr		
2285	2290	2295		
Val Gly Gly Ser Thr Ser	Leu Asn Gly Gln Cys	Glu Trp Leu Ser		
2300	2305	2310		
Arg Leu Gln Ser Gly Met	Val Pro Asn Gln Tyr	Asn Pro Leu Arg		
2315	2320	2325		
Gly Ser Val Ala Pro Gly	Pro Leu Ser Thr Gln	Ala Pro Ser Leu		
2330	2335	2340		
Gln His Gly Met Val Gly	Pro Leu His Ser Ser	Leu Ala Ala Ser		
2345	2350	2355		
Ala Leu Ser Gln Met Met	Ser Tyr Gln Gly Leu	Pro Ser Thr Arg		
2360	2365	2370		
Leu Ala Thr Gln Pro His	Leu Val Gln Thr Gln	Gln Val Gln Pro		
2375	2380	2385		
Gln Asn Leu Gln Met Gln	Gln Gln Asn Leu Gln	Pro Ala Asn Ile		
2390	2395	2400		
Gln Gln Gln Gln Ser Leu	Gln Pro Pro Pro Pro	Pro Pro Gln Pro		
2405	2410	2415		
His Leu Gly Val Ser Ser	Ala Ala Ser Gly His	Leu Gly Arg Ser		
2420	2425	2430		
Phe Leu Ser Gly Glu Pro	Ser Gln Ala Asp Val	Gln Pro Leu Gly		
2435	2440	2445		
Pro Ser Ser Leu Ala Val	His Thr Ile Leu Pro	Gln Glu Ser Pro		
2450	2455	2460		
Ala Leu Pro Thr Ser Leu	Pro Ser Ser Leu Val	Pro Pro Val Thr		
2465	2470	2475		
Ala Ala Gln Phe Leu Thr	Pro Pro Ser Gln His	Ser Tyr Ser Ser		
2480	2485	2490		
Pro Val Asp Asn Thr Pro	Ser His Gln Leu Gln	Val Pro Glu His		
2495	2500	2505		
Pro Phe Leu Thr Pro Ser	Pro Glu Ser Pro Asp	Gln Trp Ser Ser		
2510	2515	2520		
Ser Ser Pro His Ser Asn	Val Ser Asp Trp Ser	Glu Gly Val Ser		
2525	2530	2535		
Ser Pro Pro Thr Ser Met	Gln Ser Gln Ile Ala	Arg Ile Pro Glu		
2540	2545	2550		
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2555				

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 <211> 2471
 <212> PRT

<213> Homo sapiens

<400> 16

Met Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ala Leu Trp
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Leu Cys Cys Ala Ala Pro Ala His Ala Leu Gln Cys Arg Asp Gly Tyr
20 25 30
Glu Pro Cys Val Asn Glu Gly Met Cys Val Thr Tyr His Asn Gly Thr
35 40 45
Gly Tyr Cys Lys Cys Pro Glu Gly Phe Leu Gly Glu Tyr Cys Gln His
50 55 60
Arg Asp Pro Cys Glu Lys Asn Arg Cys Gln Asn Gly Gly Thr Cys Val
65 70 75 80
Ala Gln Ala Met Leu Gly Lys Ala Thr Cys Arg Cys Ala Ser Gly Phe
85 90 95
Thr Gly Glu Asp Cys Gln Tyr Ser Thr Ser His Pro Cys Phe Val Ser
100 105 110
Arg Pro Cys Leu Asn Gly Gly Thr Cys His Met Leu Ser Arg Asp Thr
115 120 125
Tyr Glu Cys Thr Cys Gln Val Gly Phe Thr Gly Lys Glu Cys Gln Trp
130 135 140
Thr Asp Ala Cys Leu Ser His Pro Cys Ala Asn Gly Ser Thr Cys Thr
145 150 155 160
Thr Val Ala Asn Gln Phe Ser Cys Lys Cys Leu Thr Gly Phe Thr Gly
165 170 175
Gln Lys Cys Glu Thr Asp Val Asn Glu Cys Asp Ile Pro Gly His Cys
180 185 190
Gln His Gly Gly Thr Cys Leu Asn Leu Pro Gly Ser Tyr Gln Cys Gln
195 200 205
Cys Pro Gln Gly Phe Thr Gly Gln Tyr Cys Asp Ser Leu Tyr Val Pro
210 215 220
Cys Ala Pro Ser Pro Cys Val Asn Gly Gly Thr Cys Arg Gln Thr Gly
225 230 235 240
Asp Phe Thr Phe Glu Cys Asn Cys Leu Pro Gly Phe Glu Gly Ser Thr
245 250 255
Cys Glu Arg Asn Ile Asp Asp Cys Pro Asn His Arg Cys Gln Asn Gly
260 265 270
Gly Val Cys Val Asp Gly Val Asn Thr Tyr Asn Cys Arg Cys Pro Pro
275 280 285
Gln Trp Thr Gly Gln Phe Cys Thr Glu Asp Val Asp Glu Cys Leu Leu
290 295 300
Gln Pro Asn Ala Cys Gln Asn Gly Gly Thr Cys Ala Asn Arg Asn Gly
305 310 315 320
Gly Tyr Gly Cys Val Cys Val Asn Gly Trp Ser Gly Asp Asp Cys Ser
325 330 335
Glu Asn Ile Asp Asp Cys Ala Phe Ala Ser Cys Thr Pro Gly Ser Thr
340 345 350
Cys Ile Asp Arg Val Ala Ser Phe Ser Cys Met Cys Pro Glu Gly Lys

355					360					365					
Ala	Gly	Leu	Leu	Cys	His	Leu	Asp	Asp	Ala	Cys	Ile	Ser	Asn	Pro	Cys
370						375					380				
His	Lys	Gly	Ala	Leu	Cys	Asp	Thr	Asn	Pro	Leu	Asn	Gly	Gln	Tyr	Ile
385					390					395					400
Cys	Thr	Cys	Pro	Gln	Gly	Tyr	Lys	Gly	Ala	Asp	Cys	Thr	Glu	Asp	Val
				405					410					415	
Asp	Glu	Cys	Ala	Met	Ala	Asn	Ser	Asn	Pro	Cys	Glu	His	Ala	Gly	Lys
			420					425					430		
Cys	Val	Asn	Thr	Asp	Gly	Ala	Phe	His	Cys	Glu	Cys	Leu	Lys	Gly	Tyr
		435					440					445			
Ala	Gly	Pro	Arg	Cys	Glu	Met	Asp	Ile	Asn	Glu	Cys	His	Ser	Asp	Pro
		450				455						460			
Cys	Gln	Asn	Asp	Ala	Thr	Cys	Leu	Asp	Lys	Ile	Gly	Gly	Phe	Thr	Cys
465					470					475					480
Leu	Cys	Met	Pro	Gly	Phe	Lys	Gly	Val	His	Cys	Glu	Leu	Glu	Ile	Asn
				485					490					495	
Glu	Cys	Gln	Ser	Asn	Pro	Cys	Val	Asn	Asn	Gly	Gln	Cys	Val	Asp	Lys
			500					505					510		
Val	Asn	Arg	Phe	Gln	Cys	Leu	Cys	Pro	Pro	Gly	Phe	Thr	Gly	Pro	Val
		515					520					525			
Cys	Gln	Ile	Asp	Ile	Asp	Asp	Cys	Ser	Ser	Thr	Pro	Cys	Leu	Asn	Gly
	530					535					540				
Ala	Lys	Cys	Ile	Asp	His	Pro	Asn	Gly	Tyr	Glu	Cys	Gln	Cys	Ala	Thr
545					550					555					560
Gly	Phe	Thr	Gly	Val	Leu	Cys	Glu	Glu	Asn	Ile	Asp	Asn	Cys	Asp	Pro
				565					570					575	
Asp	Pro	Cys	His	His	Gly	Gln	Cys	Gln	Asp	Gly	Ile	Asp	Ser	Tyr	Thr
			580					585					590		
Cys	Ile	Cys	Asn	Pro	Gly	Tyr	Met	Gly	Ala	Ile	Cys	Ser	Asp	Gln	Ile
		595					600					605			
Asp	Glu	Cys	Tyr	Ser	Ser	Pro	Cys	Leu	Asn	Asp	Gly	Arg	Cys	Ile	Asp
	610					615					620				
Leu	Val	Asn	Gly	Tyr	Gln	Cys	Asn	Cys	Gln	Pro	Gly	Thr	Ser	Gly	Val
625					630					635					640
Asn	Cys	Glu	Ile	Asn	Phe	Asp	Asp	Cys	Ala	Ser	Asn	Pro	Cys	Ile	His
			645						650					655	
Gly	Ile	Cys	Met	Asp	Gly	Ile	Asn	Arg	Tyr	Ser	Cys	Val	Cys	Ser	Pro
			660					665					670		
Gly	Phe	Thr	Gly	Gln	Arg	Cys	Asn	Ile	Asp	Ile	Asp	Glu	Cys	Ala	Ser
		675					680					685			
Asn	Pro	Cys	Arg	Lys	Gly	Ala	Thr	Cys	Ile	Asn	Gly	Val	Asn	Gly	Phe
	690					695					700				
Arg	Cys	Ile	Cys	Pro	Glu	Gly	Pro	His	His	Pro	Ser	Cys	Tyr	Ser	Gln
705					710					715					720
Val	Asn	Glu	Cys	Leu	Ser	Asn	Pro	Cys	Ile	His	Gly	Asn	Cys	Thr	Gly
				725					730					735	

Gly Leu Ser Gly Tyr Lys Cys Leu Cys Asp Ala Gly Trp Val Gly Ile
 740 745 750
 Asn Cys Glu Val Asp Lys Asn Glu Cys Leu Ser Asn Pro Cys Gln Asn
 755 760 765
 Gly Gly Thr Cys Asp Asn Leu Val Asn Gly Tyr Arg Cys Thr Cys Lys
 770 775 780
 Lys Gly Phe Lys Gly Tyr Asn Cys Gln Val Asn Ile Asp Glu Cys Ala
 785 790 795 800
 Ser Asn Pro Cys Leu Asn Gln Gly Thr Cys Phe Asp Asp Ile Ser Gly
 805 810 815
 Tyr Thr Cys His Cys Val Leu Pro Tyr Thr Gly Lys Asn Cys Gln Thr
 820 825 830
 Val Leu Ala Pro Cys Ser Pro Asn Pro Cys Glu Asn Ala Ala Val Cys
 835 840 845
 Lys Glu Ser Pro Asn Phe Glu Ser Tyr Thr Cys Leu Cys Ala Pro Gly
 850 855 860
 Trp Gln Gly Gln Arg Cys Thr Ile Asp Ile Asp Glu Cys Ile Ser Lys
 865 870 875 880
 Pro Cys Met Asn His Gly Leu Cys His Asn Thr Gln Gly Ser Tyr Met
 885 890 895
 Cys Glu Cys Pro Pro Gly Phe Ser Gly Met Asp Cys Glu Glu Asp Ile
 900 905 910
 Asp Asp Cys Leu Ala Asn Pro Cys Gln Asn Gly Gly Ser Cys Met Asp
 915 920 925
 Gly Val Asn Thr Phe Ser Cys Leu Cys Leu Pro Gly Phe Thr Gly Asp
 930 935 940
 Lys Cys Gln Thr Asp Met Asn Glu Cys Leu Ser Glu Pro Cys Lys Asn
 945 950 955 960
 Gly Gly Thr Cys Ser Asp Tyr Val Asn Ser Tyr Thr Cys Lys Cys Gln
 965 970 975
 Ala Gly Phe Asp Gly Val His Cys Glu Asn Asn Ile Asn Glu Cys Thr
 980 985 990
 Glu Ser Ser Cys Phe Asn Gly Gly Thr Cys Val Asp Gly Ile Asn Ser
 995 1000 1005
 Phe Ser Cys Leu Cys Pro Val Gly Phe Thr Gly Ser Phe Cys Leu
 1010 1015 1020
 His Glu Ile Asn Glu Cys Ser Ser His Pro Cys Leu Asn Glu Gly
 1025 1030 1035
 Thr Cys Val Asp Gly Leu Gly Thr Tyr Arg Cys Ser Cys Pro Leu
 1040 1045 1050
 Gly Tyr Thr Gly Lys Asn Cys Gln Thr Leu Val Asn Leu Cys Ser
 1055 1060 1065
 Arg Ser Pro Cys Lys Asn Lys Gly Thr Cys Val Gln Lys Lys Ala
 1070 1075 1080
 Glu Ser Gln Cys Leu Cys Pro Ser Gly Trp Ala Gly Ala Tyr Cys
 1085 1090 1095
 Asp Val Pro Asn Val Ser Cys Asp Ile Ala Ala Ser Arg Arg Gly
 1100 1105 1110

Val	Leu	Val	Glu	His	Leu	Cys	Gln	His	Ser	Gly	Val	Cys	Ile	Asn
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Ala	Gly	Asn	Thr	His	Tyr	Cys	Gln	Cys	Pro	Leu	Gly	Tyr	Thr	Gly
1130						1135					1140			
Ser	Tyr	Cys	Glu	Glu	Gln	Leu	Asp	Glu	Cys	Ala	Ser	Asn	Pro	Cys
1145						1150					1155			
Gln	His	Gly	Ala	Thr	Cys	Ser	Asp	Phe	Ile	Gly	Gly	Tyr	Arg	Cys
1160						1165					1170			
Glu	Cys	Val	Pro	Gly	Tyr	Gln	Gly	Val	Asn	Cys	Glu	Tyr	Glu	Val
1175						1180					1185			
Asp	Glu	Cys	Gln	Asn	Gln	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Ile
1190						1195					1200			
Asp	Leu	Val	Asn	His	Phe	Lys	Cys	Ser	Cys	Pro	Pro	Gly	Thr	Arg
1205						1210					1215			
Gly	Leu	Leu	Cys	Glu	Glu	Asn	Ile	Asp	Asp	Cys	Ala	Arg	Gly	Pro
1220						1225					1230			
His	Cys	Leu	Asn	Gly	Gly	Gln	Cys	Met	Asp	Arg	Ile	Gly	Gly	Tyr
1235						1240					1245			
Ser	Cys	Arg	Cys	Leu	Pro	Gly	Phe	Ala	Gly	Glu	Arg	Cys	Glu	Gly
1250						1255					1260			
Asp	Ile	Asn	Glu	Cys	Leu	Ser	Asn	Pro	Cys	Ser	Ser	Glu	Gly	Ser
1265						1270					1275			
Leu	Asp	Cys	Ile	Gln	Leu	Thr	Asn	Asp	Tyr	Leu	Cys	Val	Cys	Arg
1280						1285					1290			
Ser	Ala	Phe	Thr	Gly	Arg	His	Cys	Glu	Thr	Phe	Val	Asp	Val	Cys
1295						1300					1305			
Pro	Gln	Met	Pro	Cys	Leu	Asn	Gly	Gly	Thr	Cys	Ala	Val	Ala	Ser
1310						1315					1320			
Asn	Met	Pro	Asp	Gly	Phe	Ile	Cys	Arg	Cys	Pro	Pro	Gly	Phe	Ser
1325						1330					1335			
Gly	Ala	Arg	Cys	Gln	Ser	Ser	Cys	Gly	Gln	Val	Lys	Cys	Arg	Lys
1340						1345					1350			
Gly	Glu	Gln	Cys	Val	His	Thr	Ala	Ser	Gly	Pro	Arg	Cys	Phe	Cys
1355						1360					1365			
Pro	Ser	Pro	Arg	Asp	Cys	Glu	Ser	Gly	Cys	Ala	Ser	Ser	Pro	Cys
1370						1375					1380			
Gln	His	Gly	Gly	Ser	Cys	His	Pro	Gln	Arg	Gln	Pro	Pro	Tyr	Tyr
1385						1390					1395			
Ser	Cys	Gln	Cys	Ala	Pro	Pro	Phe	Ser	Gly	Ser	Arg	Cys	Glu	Leu
1400						1405					1410			
Tyr	Thr	Ala	Pro	Pro	Ser	Thr	Pro	Pro	Ala	Thr	Cys	Leu	Ser	Gln
1415						1420					1425			
Tyr	Cys	Ala	Asp	Lys	Ala	Arg	Asp	Gly	Val	Cys	Asp	Glu	Ala	Cys
1430						1435					1440			
Asn	Ser	His	Ala	Cys	Gln	Trp	Asp	Gly	Gly	Asp	Cys	Ser	Leu	Thr
1445						1450					1455			
Met	Glu	Asn	Pro	Trp	Ala	Asn	Cys	Ser	Ser	Pro	Leu	Pro	Cys	Trp

1460	1465	1470
Asp Tyr Ile Asn Asn Gln Cys 1475	Asp Glu Leu Cys Asn Thr Val Glu 1480	Asn Thr Val Glu 1485
Cys Leu Phe Asp Asn Phe Glu 1490	Cys Gln Gly Asn Ser Lys Thr Cys 1495	1500
Lys Tyr Asp Lys Tyr Cys Ala 1505	Asp His Phe Lys Asp Asn His Cys 1510	1515
Asn Gln Gly Cys Asn Ser Glu 1520	Glu Cys Gly Trp Asp Gly Leu Asp 1525	1530
Cys Ala Ala Asp Gln Pro Glu 1535	Asn Leu Ala Glu Gly Thr Leu Val 1540	1545
Ile Val Val Leu Met Pro Pro 1550	Glu Gln Leu Leu Gln Asp Ala Arg 1555	1560
Ser Phe Leu Arg Ala Leu Gly 1565	Thr Leu Leu His Thr Asn Leu Arg 1570	1575
Ile Lys Arg Asp Ser Gln Gly 1580	Glu Leu Met Val Tyr Pro Tyr Tyr 1585	1590
Gly Glu Lys Ser Ala Ala Met 1595	Lys Lys Gln Arg Met Thr Arg Arg 1600	1605
Ser Leu Pro Gly Glu Gln Glu 1610	Gln Glu Val Ala Gly Ser Lys Val 1615	1620
Phe Leu Glu Ile Asp Asn Arg 1625	Gln Cys Val Gln Asp Ser Asp His 1630	1635
Cys Phe Lys Asn Thr Asp Ala 1640	Ala Ala Ala Leu Leu Ala Ser His 1645	1650
Ala Ile Gln Gly Thr Leu Ser 1655	Tyr Pro Leu Val Ser Val Val Ser 1660	1665
Glu Ser Leu Thr Pro Glu Arg 1670	Thr Gln Leu Leu Tyr Leu Leu Ala 1675	1680
Val Ala Val Val Ile Ile Leu 1685	Phe Ile Ile Leu Leu Gly Val Ile 1690	1695
Met Ala Lys Arg Lys Arg Lys 1700	His Gly Ser Leu Trp Leu Pro Glu 1705	1710
Gly Phe Thr Leu Arg Arg Asp 1715	Ala Ser Asn His Lys Arg Arg Glu 1720	1725
Pro Val Gly Gln Asp Ala Val 1730	Gly Leu Lys Asn Leu Ser Val Gln 1735	1740
Val Ser Glu Ala Asn Leu Ile 1745	Gly Thr Gly Thr Ser Glu His Trp 1750	1755
Val Asp Asp Glu Gly Pro Gln 1760	Pro Lys Lys Val Lys Ala Glu Asp 1765	1770
Glu Ala Leu Leu Ser Glu Glu 1775	Asp Asp Pro Ile Asp Arg Arg Pro 1780	1785
Trp Thr Gln Gln His Leu Glu 1790	Ala Ala Asp Ile Arg Arg Thr Pro 1795	1800
Ser Leu Ala Leu Thr Pro Pro 1805	Gln Ala Glu Gln Glu Val Asp Val 1810	1815

Leu	Asp	Val	Asn	Val	Arg	Gly	Pro	Asp	Gly	Cys	Thr	Pro	Leu	Met
1820						1825					1830			
Leu	Ala	Ser	Leu	Arg	Gly	Gly	Ser	Ser	Asp	Leu	Ser	Asp	Glu	Asp
1835						1840					1845			
Glu	Asp	Ala	Glu	Asp	Ser	Ser	Ala	Asn	Ile	Ile	Thr	Asp	Leu	Val
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Tyr	Gln	Gly	Ala	Ser	Leu	Gln	Ala	Gln	Thr	Asp	Arg	Thr	Gly	Glu
1865						1870					1875			
Met	Ala	Leu	His	Leu	Ala	Ala	Arg	Tyr	Ser	Arg	Ala	Asp	Ala	Ala
1880						1885					1890			
Lys	Arg	Leu	Leu	Asp	Ala	Gly	Ala	Asp	Ala	Asn	Ala	Gln	Asp	Asn
1895						1900					1905			
Met	Gly	Arg	Cys	Pro	Leu	His	Ala	Ala	Val	Ala	Ala	Asp	Ala	Gln
1910						1915					1920			
Gly	Val	Phe	Gln	Ile	Leu	Ile	Arg	Asn	Arg	Val	Thr	Asp	Leu	Asp
1925						1930					1935			
Ala	Arg	Met	Asn	Asp	Gly	Thr	Thr	Pro	Leu	Ile	Leu	Ala	Ala	Arg
1940						1945					1950			
Leu	Ala	Val	Glu	Gly	Met	Val	Ala	Glu	Leu	Ile	Asn	Cys	Gln	Ala
1955						1960					1965			
Asp	Val	Asn	Ala	Val	Asp	Asp	His	Gly	Lys	Ser	Ala	Leu	His	Trp
1970						1975					1980			
Ala	Ala	Ala	Val	Asn	Asn	Val	Glu	Ala	Thr	Leu	Leu	Leu	Leu	Lys
1985						1990					1995			
Asn	Gly	Ala	Asn	Arg	Asp	Met	Gln	Asp	Asn	Lys	Glu	Glu	Thr	Pro
2000						2005					2010			
Leu	Phe	Leu	Ala	Ala	Arg	Glu	Gly	Ser	Tyr	Glu	Ala	Ala	Lys	Ile
2015						2020					2025			
Leu	Leu	Asp	His	Phe	Ala	Asn	Arg	Asp	Ile	Thr	Asp	His	Met	Asp
2030						2035					2040			
Arg	Leu	Pro	Arg	Asp	Val	Ala	Arg	Asp	Arg	Met	His	His	Asp	Ile
2045						2050					2055			
Val	Arg	Leu	Leu	Asp	Glu	Tyr	Asn	Val	Thr	Pro	Ser	Pro	Pro	Gly
2060						2065					2070			
Thr	Val	Leu	Thr	Ser	Ala	Leu	Ser	Pro	Val	Ile	Cys	Gly	Pro	Asn
2075						2080					2085			
Arg	Ser	Phe	Leu	Ser	Leu	Lys	His	Thr	Pro	Met	Gly	Lys	Lys	Ser
2090						2095					2100			
Arg	Arg	Pro	Ser	Ala	Lys	Ser	Thr	Met	Pro	Thr	Ser	Leu	Pro	Asn
2105						2110					2115			
Leu	Ala	Lys	Glu	Ala	Lys	Asp	Ala	Lys	Gly	Ser	Arg	Arg	Lys	Lys
2120						2125					2130			
Ser	Leu	Ser	Glu	Lys	Val	Gln	Leu	Ser	Glu	Ser	Ser	Val	Thr	Leu
2135						2140					2145			
Ser	Pro	Val	Asp	Ser	Leu	Glu	Ser	Pro	His	Thr	Tyr	Val	Ser	Asp
2150						2155					2160			
Thr	Thr	Ser	Ser	Pro	Met	Ile	Thr	Ser	Pro	Gly	Ile	Leu	Gln	Ala
2165						2170					2175			

Ser Pro Asn Pro Met Leu Ala Thr Ala Ala Pro Pro Ala Pro Val
 2180 2185 2190
 His Ala Gln His Ala Leu Ser Phe Ser Asn Leu His Glu Met Gln
 2195 2200 2205
 Pro Leu Ala His Gly Ala Ser Thr Val Leu Pro Ser Val Ser Gln
 2210 2215 2220
 Leu Leu Ser His His His Ile Val Ser Pro Gly Ser Gly Ser Ala
 2225 2230 2235
 Gly Ser Leu Ser Arg Leu His Pro Val Pro Val Pro Ala Asp Trp
 2240 2245 2250
 Met Asn Arg Met Glu Val Asn Glu Thr Gln Tyr Asn Glu Met Phe
 2255 2260 2265
 Gly Met Val Leu Ala Pro Ala Glu Gly Thr His Pro Gly Ile Ala
 2270 2275 2280
 Pro Gln Ser Arg Pro Pro Glu Gly Lys His Ile Thr Thr Pro Arg
 2285 2290 2295
 Glu Pro Leu Pro Pro Ile Val Thr Phe Gln Leu Ile Pro Lys Gly
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 Ser Ile Ala Gln Pro Ala Gly Ala Pro Gln Pro Gln Ser Thr Cys
 2315 2320 2325
 Pro Pro Ala Val Ala Gly Pro Leu Pro Thr Met Tyr Gln Ile Pro
 2330 2335 2340
 Glu Met Ala Arg Leu Pro Ser Val Ala Phe Pro Thr Ala Met Met
 2345 2350 2355
 Pro Gln Gln Asp Gly Gln Val Ala Gln Thr Ile Leu Pro Ala Tyr
 2360 2365 2370
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 2375 2380 2385
 Gln His Ser Tyr Ala Ser Ser Asn Ala Ala Glu Arg Thr Pro Ser
 2390 2395 2400
 His Ser Gly His Leu Gln Gly Glu His Pro Tyr Leu Thr Pro Ser
 2405 2410 2415
 Pro Glu Ser Pro Asp Gln Trp Ser Ser Ser Ser Pro His Ser Ala
 2420 2425 2430
 Ser Asp Trp Ser Asp Val Thr Thr Ser Pro Thr Pro Gly Gly Ala
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